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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/812,471	03/19/2001	Thomas L. Benjamin	00742/062002	1563

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EXAMINER
SALIMI, ALI REZA

ART UNIT	PAPER NUMBER
1648	

DATE MAILED: 07/28/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/812,471	Applicant(s) BENJAMIN, THOMAS L.	
	Examiner A. R. Salimi	Art Unit 1648	

-- The MAILING DATE of this communication app ars on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *03 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) *1-19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *20-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5,6,9* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 1648.

Claims 1-28 are pending.

Raw Sequence Listing have been entered.

Submitted Information Disclosure Statement (I.D.S) is noted.

Election/Restriction

Applicant's election without traverse of Group IV (Claims 20-28) in Paper No. 13 is acknowledged.

Claims 1-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Groups. Election was made without traverse in Paper No. 13.

Applicant is reminded to cancel the claims to the non elected claims.

Claim Rejections - 35 USC § 112

Claims 20-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 is vague and indefinite for recitation of "abnormally proliferating cell", "abnormally" is a relative term, and is subject to varied interpretation. In addition, the claim is vague and indefinite for recitation of "T-HR mutant", the intended metes and bounds of the "T-HR" is not defined. This affects the dependent claims 21-28.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the cell types, the exact sequence of T-HR mutant, etc...

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: when to contact, how to contact, the effective amount, the conditions, etc...

Claim 21 is indefinite, the intended cell or cells is/are not defined.

Claim 23 is indefinite for recitation of "proliferative disorder", what is/are the intended disorder? Does a benign wart which exhibits abnormal cell growth within the scope of the claimed invention?

Claim 28 recites the limitation "wherein said virus" in line 1. There is insufficient antecedent basis for this limitation in the claim. Claim 20 has no limitation of "virus" any where in the claim. In addition, it is not clear what if anything the viruses are intended to perform? Is administration of virus intended, or the viruses are suppose to be expression vectors? The claims have been interpreted in light of the specification and since the specification lacks teaching it si difficult to decipher the intended claims in view of the specification and as a consequence the claim is vague and indefinite.

Claim Rejections - 35 USC § 112

Claims 20-28 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method observing plasmid mSal2 decreasing proliferation of an abnormally proliferating ovarian cell in an *in vitro setting only*, wherein the genome of the ovarian cell comprises a point mutation in *Sal2* gene, does not reasonably provide enablement for decreasing proliferation of *any* abnormally proliferating cell *in vitro* or *in vivo* in any subject with any vector, and it does not reasonably provide enablement for decreasing the replication and dissemination of any DNA tumor virus *in vitro* or *in vivo*. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims. At the onset applicant is reminded this field is considered highly unpredictable, as applicant's own discloser is testament to the unpredictability of the field. In addition, applicant is reminded that the disclosure should provide

adequate teaching so one of ordinary skill in the art can practice the invention absent undue experimentation. The specification is extremely deficient in providing adequate teaching for one of skill in the art to practice the invention absent undue experimentation. The specification provides no examples, no in vivo data has been shared with the Office. The only information which can be deciphered is when mSal2 plasmid transfected the ovarian carcinoma cells in vitro some cell lyses were observed. However, this is far from treating any and all neoplasia or "abnormally proliferating cells" of all types with any all so called "T-HR" mutant, with all administering regiment including orally, nasally, topically etc.... What if the neoplasia does not function via mSal2, how can or how does "T-HR" is effective? Where is teaching, any, that has to do with administering "T-HR" orally, topically, etc.., and observing cell lysis. The specification does not provide how to administer the "T-HR", the effective amount, when to apply, how to apply etc.. The method has many variable and many unknowns, it is not clear what is being treated and with what, and how. Transfecting cells in vitro and observing their lysis is far from "killing abnormally proliferating cell" in vivo.

Hence, The scope of the claims are directed to method of treating cancer, Applicants have general statements regarding the method for treating neoplasia by cell lyses. However with regard to an unpredictable field, this does not constitute an adequate disclosure. See Fiers v. Revel (25USPQ2d 1601 at 1606; and also decision by the Federal Circuit with regard to the enablement issues see Genentech Inc. v. Novo Nordisk A/S, 42 USPQ2d 1001-1007). For example, the CAFC stated that "It is the specification, not the knowledge of one skilled in the art that must

supply the novel aspects of an invention in order to constitute enablement." (See page 1005 of the decision). In the instant case the specification does not teach or provide any guidance for development of a general method of treating neoplasia. This means that the disclosure must adequately guide the art worker to determine, without undue experimentation. The applicant can not rely on the knowledge of those skilled in the art to enable the claims without providing adequate teaching. Therefore, considering large quantity of experimentation needed, the unpredictability of the field, the state of the art, and breadth of the claims, it is concluded that undue experimentation would be required to enable the intended claim. Many of these factors have been summarized *In re Wands, 858 F.2d 731, USPQ2d 1400 (Fed. Cir. 1988).*

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 20-28 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims are broadly drawn to multitude of T-HR molecules. In contrast, the specification only describes sequences consisting of a Sal2, and its in vitro method of use to lyse ovarian cells. Applicants do not describe other molecules encompassed by the claims,

and the structural features that distinguish all such proteins from other proteins that are not provided and the method of their use. If applicants were not in possession of the sequences that fall within the limitation that are now present then they were not is possession of the method of using either. In order, to practice the method of claim 36 one should be in possession of the specific sequence. Providing a general formula is not indicative of possession.

Hence, Applicants have not, in fact, described the molecules that are within the full scope of the claims, and the specification fails to provide an adequate written description of the claimed invention.

Therefore, given the lack of written description in the specification with regard to the structural and physical characteristics of the claimed general sequence, it is not clear the Applicant was in possession of the genus claimed at the time this application was filed.

See *University of California v. Eli Lilly*, 119 F.3d 1559, 43 USPQ 2d 1398 (Fed, Cir. 1997):

> The name cDNA is not in itself a written description of that DNA; it conveys no distinguishing information concerning its identity. While the example provides a process for obtaining human insulin-encoding cDNA, there is no further information in the patent pertaining to that cDNA's relevant structural or physical characteristics; in other words, it thus does not describe human insulin cDNA .... Accordingly, the specification does not provide a written description of the invention ....

and at pg 1406:

> a generic statement such as "vertebrate insulin cDNA" or "mammalian insulin cDNA," without more, is not an adequate written description of the genus because it does not distinguish the genus from others, except by function. It does not specifically define any of the genes that fall within its definition. It does not define any structural features commonly possessed by members of the genus that distinguish them from others. One skilled in the art therefore cannot, as one can do with a fully described genus, visualize or recognize the identity of the members of the genus. A definition by function, as we have previously indicted, does not suffice to define the genus because it is only an indication of what the genes does, not what it is.

See *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ 2d 1016 at page 1021:

> A gene is a chemical compound, albeit a complex one, and ... conception of a chemical compound requires that the inventor be able to define it so as to distinguish it from other materials .... Conception does not occur unless one has a mental picture of the structure of the chemical or is able to define it by its method of preparation, its physical or chemical properties, or whatever characteristics sufficiently distinguish it. It is not sufficient to define it solely by it principal biological property, *e.g.*, encoding human erythropoietin, because an alleged conception having no more specificity than that is simply a wish to know the identity of any material with that biological property.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re*

Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 20-28 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of copending Application No. 09/988,117. Although the conflicting claims are not identical, they are not patentably distinct from each other because they overlap in scope. The claims of the 09/988,117 are directed to method of treating cancer cells using Sal2, which is a specie that falls within the scope of "T-HR" mutant. In addition, the subject matter of the claims are so closely related that would incorporate overlap species and/or claim 20 is so broadly drafted that would incorporate any and all species that may or may not be present in 09/988,117 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Pyles et al (WO 98/42195).

The claims and disclosure of the above cited reference anticipates the broad limitations of the claimed invention. Pyles et al taught method of preparing replication competent herpes expression vector that can be utilized method of treating glioblastoma (see the abstract, and all claims, especially claim 9). They also taught administration of the vector including orally (see page 21).

Claims 20-28 are rejected under 35 U.S.C. 102(b) as being anticipated by McCormick (US Patent No. 5,677,178).

The teaching and claims of the above cited patent meet the broad limitations of the claimed invention (see claims 1-29). . McCormick taught multiple method of treating neoplasia utilizing adenovirus. In addition, see Column 16, lines 65-68, and Column 17, lines 1-14).

Claims 20-25, 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Lathe et al (US patent No. 5,774,133).

Lathe et al taught method of treating tumors via viral vector (see all claims, i.e claim 1, 4-7). The teaching and claim of the above cited patent meets the broad limitations of the claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 20-25, 28 are rejected under 35 U.S.C. 102(a) as being anticipated by Lathe et al (US patent No. 6,007,806).

Lathe et al taught method of treating tumors via viral vector (see claim 1). The teaching and claim of the above cited patent meets the broad limitations of the claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 20-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Androphy et al (US patent No. 6,296,853 B1).

Androphy et al taught a method of treating papillomavirus infection which causes cervical cancer by E6-BP (see claims 3, 4).

Claims 20-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al (US patent No. 6,344,195 B1).

Lee et al taught a method of treating Ras-mediated neoplasm utilizing reovirus. The limitations of applicant's claimed invention is met by teaching of above cited patent and the claims (see Column 2, lines 10-11, and all claims).

Claims 20-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Coffey et al (US patent No. 6,596,286 B1).

Coffey taught a method of treating Ras-mediated neoplasm utilizing adenovirus. The limitations of applicant's claimed invention is met by teaching of above cited patent and the claims (see the abstract, Column 6, lines 20-36, and all claims).

Claims 20-25, 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Lathe et al (US patent No. 6,007,806).

Lathe et al taught method of treating tumors via viral vector (see claim 1). The teaching and claim of the above cited patent meets the broad limitations of the claimed invention.

No claims are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. R. Salimi whose telephone number is (703) 305-7136. The examiner can normally be reached on Monday-Friday from 9:00 Am to 6:00 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel, can be reached on (703) 308-4027. The fax phone number for this Group is (703) 305-3014, or (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

A. R. Salimi

7/24/2003